IN THE SPECIFICATION:

Please amend the paragraph at page 4, lines 21-26, to read as follows:

Figure 3 is a simplified schematic perspective view of the different layers in a patient's skin. As will be seen, there are a number of layers in the patient's skin. The bracketed indications on the left of the figure represent groupings of layers. These bracketed groupings of layers are respectively designated as epidermis, dermis and subcutaneous. They include layers designated as stratum corneum, barrier, stratum granulosum, stratum germinativum and papillae.

Please amend the paragraphs at page 5, lines 6-28, to read as follows:

Figure 5 is a schematic view showing the attachment of an electrode 12 in Figure 1 to a patient's skin 11 to provide signals for introduction to the amplifier system also shown in Figure 1. A gel 13 in Figure 4 may be disposed between the electrode 10 and the patient's epidermis layer [[skin 11]] to facilitate the attachment of the electrode to the patient's epidermis layer [[skin]]. Since each of the layers in the patient's skin has an impedance, the collective impedance of the patient's skin is progressively reduced when the successive layers are removed. With all of the layers in place in [[on]] the patient's skin, the impedance of the patient's skin may be in the order of approximately two hundred thousand (200,000) ohms. However, the amplifier system in Figure 1 is constructed to operate satisfactorily even when successive layers are not removed from the patient's skin 11 and the electrode 10 is attached to the ~~outside~~ epidermis layer.

Figure 1 is a circuit diagram, primarily in block form, of an amplifier system, generally indicated at 10, constituting a preferred embodiment of the invention. The amplifier system 10 includes a pair of electrodes 12 and 14 each of which is suitably attached to the patient's skin at a selective position on the patient's body. The electrodes 12 and 14 preferably have an identical construction. The electrode 12 is positioned at a selective position on the skin of the patient's body to produce signals related to the functioning characteristics of an organ in the patient's body. The organ may illustratively be the patient's heart, brain or the patient's stomach or intestines. The electrode 14 is positioned on the skin of the patient's body at a position displaced from the selective position to provide reference signals. The difference between the signals at the electrodes 12 and 14 represents the functioning characteristics of the selected one of the patient's organs such as the patient's heart.

Please amend the paragraph at page 6, lines 21-27, to read as follows:

Since the amplifiers 16 and 18 have identical constructions, they operate to provide signals which represent the difference between the signals on the electrodes 12 and 14. This indicates the functioning of the patient's organ which is being determined by the amplifier system 10 [[30]]. Although the electrodes 12 and 14 are displaced from each other on the skin of the patient's body, they tend to receive the same noise signals. As a result, the difference between the signals on the output terminals of the amplifiers 16 and 18 does not include any noise.

Please amend the paragraph at page 7, lines 11-19, to read as follows:

The capacitors 24, 26 and 30 and the resistors 20 and 22 provide a low-pass filter and a differential circuit and operate to eliminate the noise on the electrodes 12 and 14. The capacitors 24, 26 and 30 also operate to provide signals which eliminate the commonality between the signals in the electrodes 12 and 14 so that only the signals individual to the functionality being determined relative to the selected organ in the patient's body remain. The capacitors 24, 26 and 30 operate as a low pass filter and pass signals in a range to approximately one kilohertz (1 KHz). The signals having a frequency above approximately one kilohertz (1 KHz) are attenuated ~~atentuated~~.

Please amend the paragraph at page 7, lines 25-29, to read as follows:

As shown in Figure 2, the amplifier 16 includes an input terminal 50 which receives the signals at the electrode 12 and introduces these signals to the gate of a transistor ~~transmitter~~ 52. The source of the transistor 52 receives a positive voltage from a terminal 56 through a resistor 54. The emitter of the transistor 52 is common with an input terminal in a noise free cascode 58.

Please amend the paragraphs at page 8, lines 1-25, to read as follows:

Another terminal 60 receives the signals on the electrode 14 and introduces these [[those]] signals to a gate of a transistor 64. A connection is made from the source of the transistor 64 to one terminal of a resistor 66, the other terminal of which receives the voltage from the terminal 56. The emitter of the transistor 64 is common with an input

terminal in the noise-free cascode 58. The resistor 66 has a value equal to that of the resistor 54 and the transistors 52 and 64 have identical characteristics.

First terminals of resistors 68 and 70 having equal values are respectively connected to output terminals in the noise-free cascode 58 and input terminals of an amplifier 74. The amplifier 74 provides an output at a terminal 76. The output from the terminal 76 is introduced to the input terminal 60. The amplifier 74 receives the positive voltage on the terminal 56 and a negative voltage on a terminal 78. Connections are made to the terminal 78 from the second terminals of the resistors 68 and 70.

The transistors 52 and 64 operate on a differential basis to provide an input impedance of approximately 10^{15} ohms between the gates of the transistors. The output impedance from the amplifier 16 is approximately fifty (50) ohms to seventy-five (75) ohms. Because of the high input impedance of approximately 10^{15} ohms, the amplifier 16 provides an input impedance approaching infinity. This causes the amplifier 16 to provide the equivalent of an open circuit at its input. This causes substantially all of the voltage applied to the input terminal 50 to be provided at the output of the amplifier 16. This is facilitated by the low impedance of approximately fifty ohms (50 ohms) to seventy-five (75) ohms at the output of the amplifier 16 [[12]]. This voltage has characteristics corresponding to the characteristics of the voltage at the electrode 12.